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INFORMATION REPORT

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THIS IS UNEVALUATED INFORMATION

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1. Experimental work on rapid rates of loading of metals, at the instigation of Prof. Robert Rompe, was carried out at the Bergakademie in Freiberg by (fnu) Engelhardt. Engelhardt experimented on heterogeneous materials while Eder, in Rompe's Institute, worked on monocrystals of copper. As results of this research, Woehler diagrams were developed and studied.

2. The Berliner Gluehlampenwerk (BGW) was approached by an official representative of the East German Ministry for Water Supply with the request that work be undertaken by BGW to find a substitute for iron water pipes. It was indicated that a large pipe system was to be constructed but raw materials for the pipes were unavailable. The proposed construction program could be carried out only if a suitable substitute material for iron could be found. One material developed consisted of a mixture of iron powder and powdered basalt which was fabricated by conventional powder metallurgy.

Iron powder was mixed with finely crushed basalt, cold pressed and then sintered at 1350° to 1360° C. This sintering temperature is in the softening range of basalt which has a melting point of 1390° C. The resultant material was extremely hard and could be shaped only by grinding with corundum or diamond wheels. Brinnell-scale hardness tests were taken because of the unavailability of a microhardness tester. The exact hardness measurements were not reported. It was determined that because of the large presses required, the material was not adaptable for the manufacture of water pipes. It was believed, however, that the material might be adaptable for other uses, particularly where corrosion and erosion resistance are required, as for example in liners and water wheel blades.

3. The universal hard metal U5 was developed at the BGW laboratory 1/ by Kohlerman [redacted] On a microphotograph of this material, taken at magnification 1200X, an extremely finely grained structure could be observed. Sodium silicate was added to U5 to refine the granular structure. The resultant material has been used successfully in East Germany and has made possible a useful standardization of a wide variety of cutting tools and, in addition, has eliminated the necessity of keeping stockpiles of various types of tool bits.

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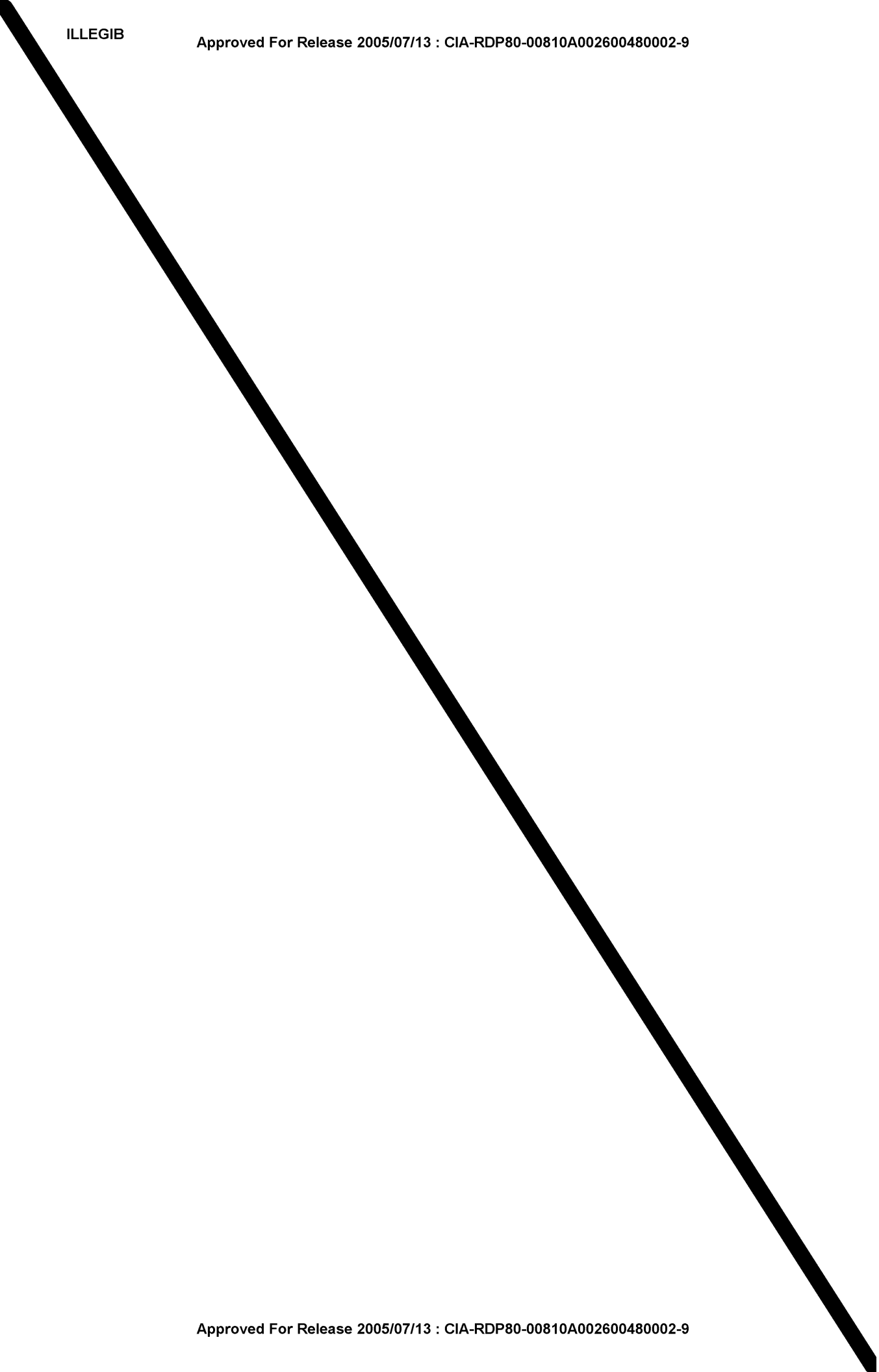

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sheets and the mill in Auerhammer was not much more proficient. The rolling mill technologists at Auerhammer were not adequately trained. The plant supposedly was to receive a [redacted] vacuum furnace for the melting of nickel and iron-nickel alloys for use in vacuum tubes. 25X1

25X1 1. [redacted] Comment: This laboratory developed and produced contacts of tungsten combined with copper.

25X1 2. [redacted] Comment: Probably Eisen- und Huettenwerke Thale, of SAG Werten.

25X1 3. [redacted] Comment: VEB Halbzeugwerk Auerhammer, Aue, Saxony.